Position paper on the further development of the German gas market areas in the light of the Gas Target Model II

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Introduction

The PEGAS platform, operated by the French EEX Group member Powernext, is the leading platform in gas spot trading in Europe today. By the end of the year 2016, the PEGAS platform will cover the Gaspool, NCG, TTF, NBP, PEG NORD, TRS, PSV, CEGH VTP, ETF, ZEE and ZTP hubs. Between these hubs, spread products can be traded on both the spot and the futures market. The PEGAS platform incorporates all gas-related activities of EEX Group, which has offered gas trading since 2006. All natural gas products offered on the PEGAS platform are cleared by ECC, the clearing house of EEX Group.

Since then, the product and service portfolio has been constantly amended and expanded, and reaches from standard futures contracts to tailor-made spot and balancing products and the coupling of market areas together with system operators (PEG NORD and TRS, together with GRT Gaz). Recently, spread products have been amended so as to make them tradable 24/7, and the coupling mechanism between PEG Nord and TRS has been extended to include weekends.

PEGAS understands itself as a facilitator of markets, with the ultimate goal to contribute to shaping the European internal market for gas. The connection of market areas via spread products or other trading mechanisms is a key element towards reaching this goal. While PEGAS can enhance trading by providing the appropriate instruments, in the relevant national body holds responsibility for shaping the rules regarding the allocation mechanisms for transport infrastructure within and between hubs. Such rules should ensure that both trading of gas and the allocation of infrastructure are efficient at the benefit of the end consumer.

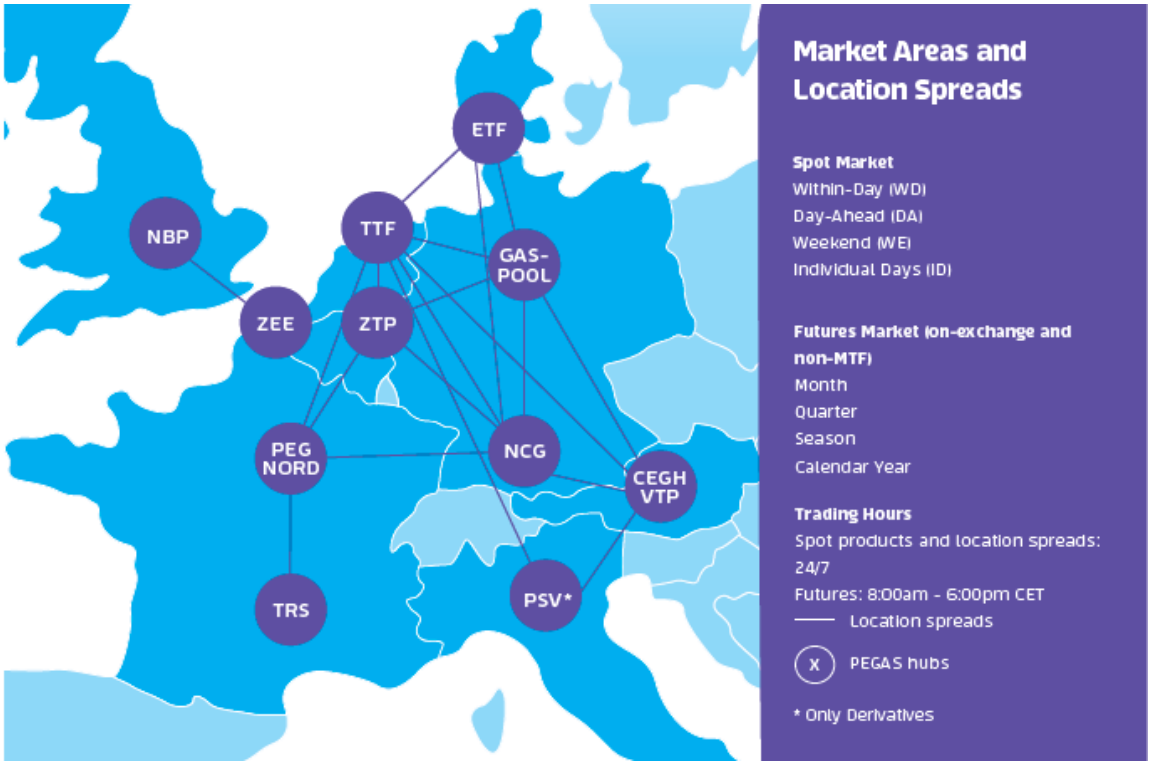

Figure 1: Hubs of the PEGAS platform. VTP joins in the course of 2016. Source: Powernext

PEGAS welcomes the opportunity to participate in the current dialogue regarding the further development of the German market areas. The assessment has been triggered by the updated ACER Gas Target Model of 16th January 2015, which asks national regulators to assess the functioning of their market areas until 2017. The German Bundesnetzagentur (BNetzA) has asked the consulting company WECOM for an analysis of the status quo and of possible measures to improve the functioning of market areas. This study was published in May 2016.

In the study, several metrics as proposed by the Gas Target Model II are being calculated in order to determine the German market areas' performance. These metrics refer to two aspects: market health and customer needs. Market health metrics cover questions of competition and security of supply, whereas the customer needs metrics effectively measure the liquidity of the market areas. The study then discusses measures to improve market functioning, one of them being the integration of market areas. An assessment of the need to integrate market areas is the focus of the paper at hand.

WECOM study's results on market performance metrics

The expertise by WECOM shows that the German hubs perform well regarding the market health metrics. Only the Herfindahl-Hirschmann Index (HHI), which measures the diversity of gas imports, is below the target value. However, the calculation of the HHI for Germany alone is not meaningful without the consideration of the neighbouring markets. Germany is embedded in the internal European gas market, and thus, security of supply is a common good within the internal market. As a consequence, market area integration cannot increase security of supply, it can only increase the HHI. The security of supply, which the HHI seeks to measure, is independent of how market areas in the European Union are defined. Security of supply is ultimately defined by the import structure into the European market and by domestic production.

Regarding the liquidity of markets, the expertise states that both Gaspool and NCG perform well on spot markets, but that derivative markets are not sufficiently liquid to meet the requirements of the gas target model. Figure 2 shows all indices for the status quo and for different scenarios of market area integration that have been analysed by WECOM.

The metrics that have been used to measure liquidity comprise order book volume, bid-offer spread, order book price sensitivity and number of trades. In principle, these metrics are suitable for measuring the liquidity of the markets. However, there are some missing points which we would like to mention:

	Degree of fulfillment (2014)									
	Market health metrics			Market participants' needs metrics			Security of supply			
	NoS	HHI	RSI	Spot	Prompt	Forward	N-1	IRDI	SDC*	SRC**
Threshold	≥ 3	≤ 2.000	≥ 110% of demand	100%	100%	100%	≥ 100%	≤ 2.000	% of demand	% of max. rate
GPL	100%	67%	100%	67%	15%	2%	100%	88%	35%	107%
NCG	100%	73%	100%	80%	21%	5%	100%	93%	28%	95%
NCG+GPL	100%	74%	100%	100%	37%	19%	100%	100%	31%	100%
NCG+GPL+TTF	100%	100%	100%	100%	87%	66%	100%	100%	29%	85%
NCG+GPL+BeLux+ZTP(L)+ZEE	100%	81%	100%	100%	40%	20%	100%	100%	26%	87%
NCG+GPL+BeLux+ZTP(L)+ZEE+TTF	100%	100%	100%	100%	88%	66%	100%	100%	26%	78%
NCG+GPL+VOB	100%	71%	100%	100%	37%	19%	100%	100%	33%	97%
NCG+TTF	100%	93%	100%	100%	86%	66%	100%	95%	27%	78%
NCG+BeLux	100%	83%	100%	81%	21%	5%	100%	100%	23%	79%
NCG+BeLux+ZTP(L)+ZEE	100%	79%	100%	99%	30%	6%	100%	95%	21%	74%
NCG+PEGN+TRS	100%	93%	100%	83%	23%	6%	100%	100%	31%	90%
NCG+CEGH	100%	72%	100%	100%	34%	8%	100%	98%	32%	94%
GPL+TTF	100%	94%	100%	100%	85%	66%	100%	100%	30%	81%
GPL+BeLux	100%	89%	100%	68%	15%	2%	100%	100%	27%	87%
GPL+BeLux+ZTP(L)+ZEE	100%	87%	100%	95%	19%	3%	100%	100%	25%	80%
GPL+BeLux+ZTP(L)+ZEE+TTF	100%	100%	100%	100%	86%	66%	100%	100%	25%	73%

(*) Storage Demand Coefficient (SDC): This coefficient analyses to which amount the demand of the considered market area can be met by the available working gas volume.

(**) Storage Rate Coefficient (SRC): This coefficient compares the maximum available withdrawal rate of storages within the market area and the necessary amount of gas to cover demand in case of emergency (which occurs once in twenty years, according to Regulation (EU) 994/2010).

Figure 2: Metrics regarding market health and market participants' needs. Source: WECO

1) Order book data of exchanges has not been considered in the analysis, only order book data of broker platforms has been taken into account. Regarding exchange trading, only data on transactions has been used. This underestimates liquidity, since transaction data is an insufficient proxy for order book data;
2) Spread trading: The liquidity of a spread order book has a direct impact on the effective liquidity in the order book of a local market. That is to say, order book volume and order book price sensitivity are underestimated if corresponding spread order books are not taken into account, as is the case in the WECOM study. On the PEGAS futures markets, we see that more than 50% of the activity comes from spread transactions. This underestimates liquidity,
3) OTC trading: bilateral OTC trading is not taken into account in the analysis, thus underestimating the liquidity of the overall market.

Therefore, all three methodological constraints lead to an underestimation of liquidity. Although the methodology applied by WECOM underestimates liquidity on spot and derivatives markets on the hubs Gaspool and NCG, we share the conclusion that liquidity on derivatives markets is low.

The role of the TTF as a hedging hub today

However, the existence of a liquid derivative market in Germany is not a must, as long as market participants have an alternative to hedge their local price risk. The TTF forms such an alternative today. Due to an interconnection to the German market areas that is free of congestion, price risks can be hedged in several ways. A buyer of gas, for example, has the following options:

- Buying gas on TTF and shipping it to Germany. This requires booking capacity which creates additional costs.
- Buying gas on TTF and closing the position before delivery. Costs for transportation are not incurred. This hedge is the better, the better prices between TTF and German hubs converge, since the physical quantity is ultimately bought on the local market. Spread products allow for efficiently conducting both transactions in a risk-minimising way.

The quality of the hedge depends on the convergence of spot prices of both markets. As Figure 3 below indicates, prices have been converging constantly over the last 5 years. Remaining price differences can be explained by transportation costs, e.g. capacity bookings and entry-exit tariffs. Since, fundamentally, the transport capacity is sufficient between TTF and the German market areas, the price difference between spot prices -which reduces the quality of the hedge- is caused by the design of such transportation costs, and does not constitute a mal-functioning of the market mechanisms.

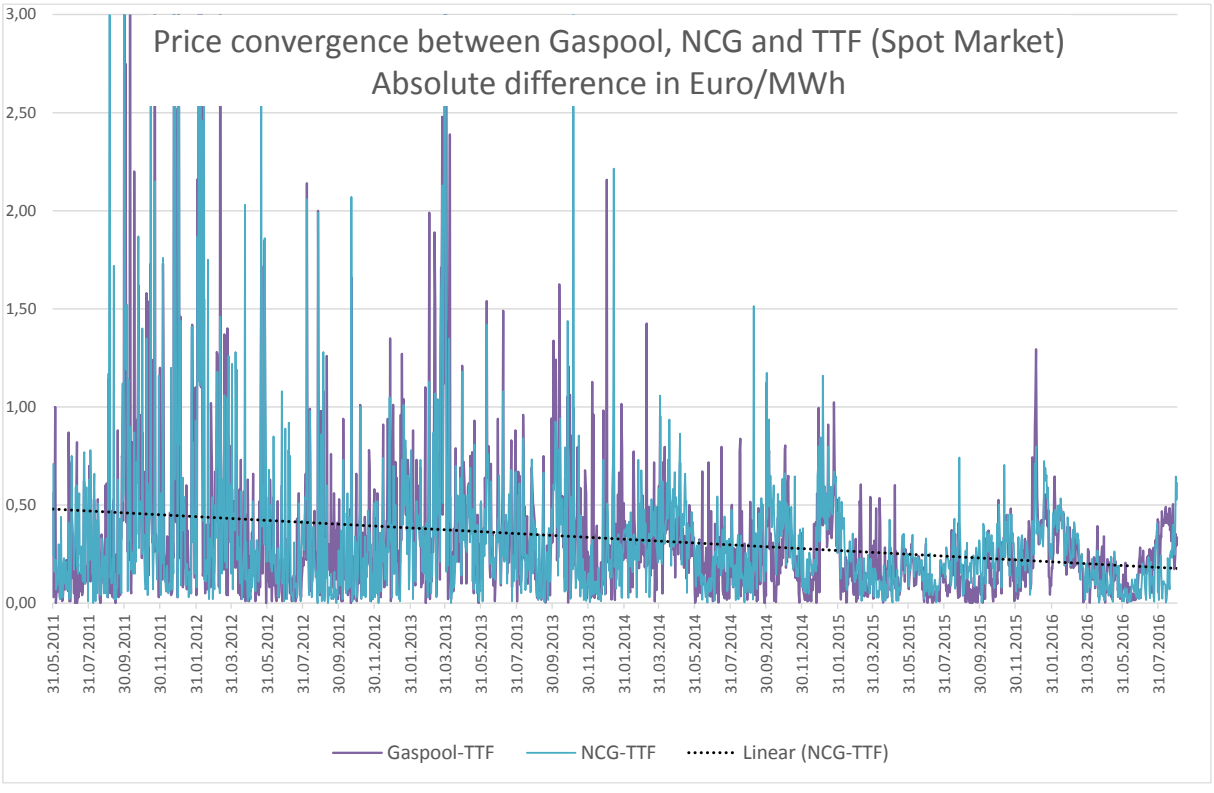

Figure 3: Convergence between spot prices indices (comprising L and H gas transactions) on TTF, Gaspool and NCG. Source: Powernext

Market area integration scenarios

The study by WECOM analyses the integration of market areas with respect to different scenarios. The authors conclude that only a merger with the TTF would lead to a sufficient increase of liquidity in the German market areas, whereas other constellations and, in particular, the merger of TTF and Gaspool only without TTF, do not increase liquidity significantly.

The argumentation in the previous section outlined that, today, the TTF is the central hedging hub for continental Europe. A market area integration of NCG and Gaspool with the TTF would effectively enable market participants in the German market to benefit from the TTF as they do today, but without bearing capacity costs or entry/exit fees at the border.

We would therefore express the result of the study differently: An integration with the TTF does not increase liquidity in the German market areas, it rather re-allocates costs stemming from shipping gas from TTF to Germany.

Since costs are re-allocated among market participants and not reduced, welfare does not necessarily increase when market areas are integrated. Generally speaking, there is a trade-off between:

- Many market areas, which enables prices to reflect the infrastructure and possible bottlenecks in the most efficient way. Costs are seen in the market, e.g. by the traders,
- Few market areas, where bottlenecks are not reflected in market prices, but where the market benefits from large liquidity pools. Costs are implicit, e.g. seen by the system operators and then allocated to end consumers.

It can be assumed that the optimal configuration lies between of those two extremes. Looking at the specific case of NCG, Gaspool and TTF, we believe that the discussion about market area integration is rather about the re-allocation of rents and costs rather than about increasing welfare. Figure 4 shows that indeed the additional welfare that can be exploited from a full integration is relatively low.

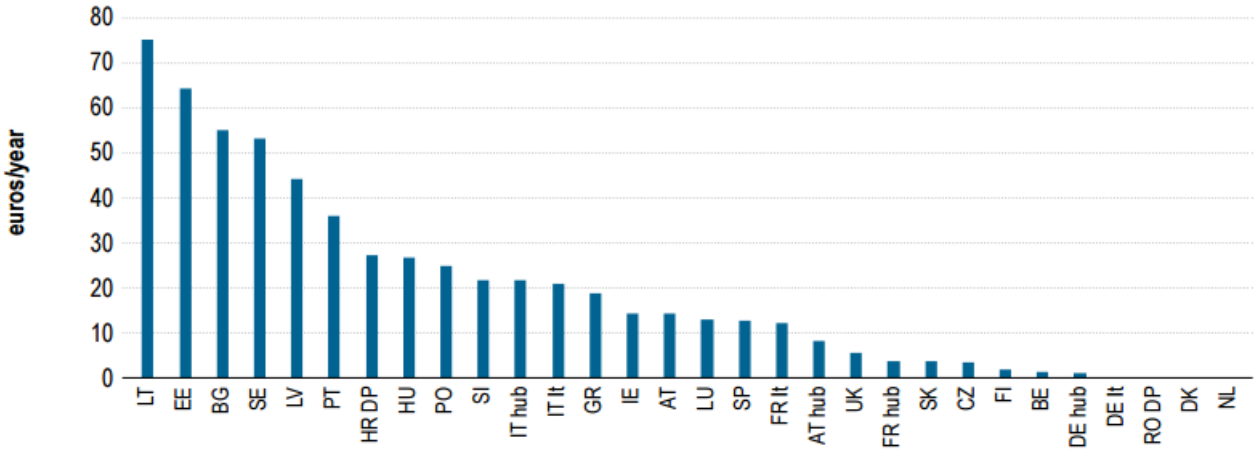

Figure 4: Gross welfare losses stemming from the absence of full integration per average household consumer in gas wholesale markets - 2015. Source: ACER Market Monitoring Report 2015 - Gas

Conclusion

The TTF today serves as a hedging hub not only for the local market, but also for neighbouring hubs like NCG and Gaspool. As a consequence, liquidity in neighbouring market areas is low on German derivatives markets, although liquidity on the spot markets is sufficiently high. If market participants in neighbouring markets hedge their price risks via the TTF, this induces transportation costs resulting from entry/exit tariffs at the border and, possibly, costs for booking physical capacity. These costs, however, do not constitute inefficiencies.

An integration of the German market areas with the TTF would enable market participants to benefit from the liquidity of the TTF without transportation costs and would, thus, increase the quality of the hedge. However, these costs are incurred elsewhere, so that the increase of welfare is expected to be small. Given the considerable costs of such an international integration of market areas as outlined in the WECOM study, the added value seems questionable.

Lastly, the further development of the European gas markets is particularly unknown today. This is due to some currently ongoing developments: The implementation of the financial regulation framework around MiFID II/MiFIR will have a substantial impact on the trading landscape in commodity derivatives and can move liquidity pools. The physical flows within Europe might also change: The production of the Groningen field has lately been reduced, and we do not know how the Groningen production will develop over the next five years. At the same time, there might be additional imports coming from Russia via North Stream 2 or via the southern route. Lastly, we expect that, in future, there will be LNG imports coming from the US, where the infrastructure is currently being constructed and gas prices are relatively low. However, new import routes change the utilisation of the existing network structure and can also create new bottlenecks. So, today's integration efforts might turn out to be counter-productive.

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